

ABSTRACT

A method detecting change of a physically measurable property of a sample due to an environmental effect, including (i) subjecting the sample to the environmental effect for an action time, the environmental effect acting on the sample with a known position-dependent intensity distribution based on a pattern function, (ii) subsequently detecting transmission, reflection, or scattering of analysis radiation by the sample as a function of position coordinates of the sample and wavelength of the analysis radiation, to determine a response function describing intensity of the transmitted, reflected, or scattered analysis radiation as a function of the position coordinates wavelength, (iii) determining correlation of the known position-dependent intensity distribution of the environmental effect, or of the pattern function on which it is based, with the response function by correlation analysis, this correlation being a measure of the change of the physically measurable property of the sample due to the environmental effect.